

## EPA Official Record

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**Subject:** LDWG\_FWM\_resolution of values for parameter distributions

Bruce, Burt, Alison and LDWG Tech Leads

After a long chain of emails I want to make sure that we have resolution on our parameter values.

We are going to start making changes to the model input later today, will run the model Thursday/Friday and start processing output Monday September 25<sup>th</sup>.

As we all know, we cannot continue to change our parameter values throughout calibration. It is essential that we have a final calibration by the end of October.

Here is our current summary of resolution on parameter distribution values:

Please see the attached Probability Distributions Summary tables, updated since you last saw it Sept 14<sup>th</sup>, (new

changes are highlighted in yellow). New diets are attached as well with highlighted changes.

**If you have questions or concerns in the next two days please email Kathy.**

## **DIETS** (see attached EXCEL worksheet).

- I made the changes to shiner surfperch and juvenile fish as requested by Jay and Bruce.
- I added a footnote about phytoplankton representing benthic algae

## **POC**

- Debra calculated a new POC number using 1.86% of TSS as an estimate of POC for samples that resulted in a negative or zero value for POC.
  - METHOD: When the DOC is larger than the TOC, estimate the POC by taking 1.86% of the TSS-0.45  $\mu\text{m}$  to estimate the amount of POC in the water. This is assuming the SWAC of sediment TOC (1.86%) can be applied to the total suspended sediments in the water column to estimate the POC. We use the 0.45  $\mu\text{m}$  measurement of TSS to be consistent with the filter size used to determine DOC in the water column. Basically, instead of the standard TSS measurement of using 1.0  $\mu\text{m}$  filter we use the 0.45 $\mu\text{m}$  filter measurement method (we ran both).
  - Our numbers to use in the model will be
  - Mean = 0.26 SE = 0.04 (mg/L)
  - They will appear in the table as  $2.6 \times 10^{-7}$  and  $4.0 \times 10^{-8}$  (kg/L) as these are the units used in the model (sorry for the units error in the previous version of the parameter distribution summary table, the numbers will be presented as kg/L from now on)

## **Sediment SWAC**

We propose to use the IDW SWAC of 390 as a point estimate.

Using a point estimate is a reasonable approach because error in the SWAC point estimate will be offset when the model is used in the future to calculate RBGs.

The error around the estimate of the mean PCB sediment concentration consists of error in the GIS method in

estimating PCB sediment concentrations between sediment samples.

The error around the back calculated sediment RBG (independent of the GIS method) will consist of error in our estimates of the mean for all model input parameters.

## **Concentration of PCBs in the Water Column**

Same as was in “Table 1. Generalized Sensitivity Analysis: Probability Distributions ” at EPA meeting on Sept 12<sup>th</sup>.

For the MODE of the triangle distribution: mean of 12 monthly averages from bottom 3 cells only of current EFDC output. Max and Min based on range in empirical King County PCB water data.

## **Dataset(s) to use for model performance criterion**

We will continue to use the combined 2004/2005 dataset for model performance criteria for the following reasons:

- 1) there are not complete datasets for both years (e.g. no benthic invertebrates or clams for 2005 and less fish and crab in 2005)
- 2) the model is performing reasonably well with the combined dataset

This is a change for our original proposed approach as we are currently not proposing to split the datasets and calibrate to each year.

If LDWG or EPA would like to do some 2004 vs 2005 comparisons, we will need to know by Oct 10<sup>th</sup>, so we can finalize the calibration by end October 2006.

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- LDW\_FWM\_diets\_current.xls



- ProbabilityDistributions\_September 20.doc